

# **A record of *Myotis blythi omari* (Mammalia, Chiroptera) from Crete, Greece.**

by

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## **Introduction**

The large transcaspian mouse-eared bat, *Myotis blythi omari* Thomas, is recorded from Crete. The study is based on the examination of 33 specimens collected from the cave „Micro labyrinthaki“, in the south area of the island. Body and skull quantitative features have been studied and compared.

**P r e v i o u s   r e c o r d s :** Until now all collected individuals of the genus *Myotis* from Crete were recorded as *Myotis oxygnathus* (Bate, 1905; Pohle, 1953; Kahmann, 1959). Only P. Strelkov (1972) based on the bibliography, recorded for the first time the individuals of Crete as *M. blythi omari*. Lanza (1959) called specimens from Sardinia, Corsica, Malta and Crete as intermediate because the dimensions of *Myotis blythi omari* variate between *M. myotis* and *M. oxygnathus*. Recently Pieper (1977) recorded *M. blythi* from owl-pellets which he collected in Crete.

**E x a m i n e d   s p e c i m e n s :** During an excursion in Crete on August 8, 1973 we collected from the above cave 33 specimens (15 males, 18 females) which were roosted together with *R. ferrumequinum creticum*. Unfortunately our first taxonomic estimation was wrong, as they were considered to be *Myotis oxygnathus*. That's why all specimens were kept in alcohol solution 80 % and no skin was available for the study of coloration. When we visited again after one year the same cave, we could not collect any bat. The reason should be the setting of fire by shepherds last winter.

## **Description**

**C r a n i a l   c h a r a c t e r s :** The skull is a slender one with braincase narrow and compressed laterally with the rostrum tapered anteriorly. The frontal section is not elevated. The nasal aperture is small and its margin is about level with the back of the third premolar. The interorbital concavity is relatively shallow. The lacrymal region is completely rounded at sides. There are no supraorbital ridges. The zygomatic arches are short with their outer borders slightly convex and enough broader than the braincase.

The braincase is ovate with the sagittal crest well defined. The lambdoid crest is well developed in the sides and the middle too. The posterior profile of the supraoccipital is vertical; the supraoccipital is very slightly overhanging the foramen magnum. The rostrum is relatively deep and rounded off at the sides with a slight concavity along the median line.

The palate is long and rather narrow while the width of the posterior extension of that is less than its length, terminating a little behind level of last molar and it forms in the posterior edge a short but well developed median spine.

The tympanic bullae rather small, the transverse diameter of each one about equal to distance between the bullae. The mandible is strong with the coronoid process well developed and the angular process projected a little behind the condyle.

**D e n t i t i o n :** The teeth are heavier than those of *M. oxygnathus* which is particularly noticeable in the breadth of the cheek teeth. Apart from their larger size, the form of the teeth is quite similar with that of *M. oxygnathus*.

**M e a s u r e m e n t s :** Measurements were taken of the skulls and of the forearms of 33 adult large transcaspien mouse-eared bats, deposited in the Zoological Museum, University of Patras, Greece (ZMPU) and in the Zoologisches Forschungsinstitut u. Museum A. Koenig, Bonn, Germany (ZFMK). Tables 1 and 2 present body and cranial measurements of the specimens from Crete, table 3 the measurements of 63 females specimens of *Myotis oxygnathus* collected from Flo-mochorion Peloponnesus (July 20, 1966) and table 4 measurements of *M. blythi omari* from S. Asia (Harrison and Lewis, 1961) and Transcaspien regions (Ognev, 1962), which have been used for comparison.

Table 1. Measurements of *Myotis blythi omari* from Crete.

	N	Mean	Females		
			Range	SD	$\sigma \bar{x}$
Forearm length	18	59.17	56.0—62.4	1.79	0.42
Greatest length of skull	18	21.81	21.2—22.4	0.33	0.08
Condylbasal length	18	20.95	20.4—21.6	0.36	0.08
Zygomatic breadth	18	14.17	13.7—14.7	0.23	0.05
Breadth of braincase	18	9.73	9.4—10.2	0.21	0.05
Interorbital constriction	18	5.30	4.9—5.4	0.15	0.04
Upper tooththrow C-M <sup>3</sup>	18	8.89	8.6—9.1	0.24	0.06
Lower tooththrow C-M <sub>3</sub>	18	9.67	9.4—10.0	0.17	0.04
Mandible length	18	16.69	16.3—17.3	0.28	0.07

Table 2. Measurements of *Myotis blythi omari* from Crete.

	Males				
	N	Mean	Range	SD	$\sigma \bar{x}$
Forearm length	15	56.75	54.0–60.0	1.47	0.38
Greatest length of skull	14	22.11	21.6–22.7	0.32	0.09
Condylbasal length	14	21.30	20.8–21.9	0.37	0.10
Zygomatic breadth	13	14.54	14.2–15.0	0.28	0.08
Breadth of braincase	15	9.89	9.5–10.2	0.22	0.06
Interorbital constriction	15	5.30	5.2–5.5	0.13	0.03
Upper tooththrow C-M <sup>3</sup>	15	9.11	8.9–9.5	0.19	0.05
Lower tooththrow C-M <sub>3</sub>	15	9.81	9.6–10.2	0.19	0.05
Mandible length	15	17.04	16.7–17.5	0.28	0.07

Table 3. Measurements of female *M. oxygnathus* from Peloponnesus

	N	Mean	Range	SD	$\sigma \bar{x}$
Total length	61	128.31	119–135	3.40	0.44
Tail length	61	58.07	54.0–62.0	2.30	0.30
Hind foot	62	12.51	11.0–13.6	0.57	0.72
Ear length	61	22.25	20.1–24.0	0.82	0.10
Tragus length	62	10.93	9.2–12.8	0.61	0.08
Forearm length	62	58.81	56.5–61.2	1.36	0.17
Greatest length of skull	61	20.98	20.0–21.9	0.40	0.05
Condylbasal length	60	20.24	19.4–21.2	0.40	0.05
Zygomatic breadth	33	13.65	13.1–14.1	0.27	0.05
Breadth of braincase	62	9.54	9.0–10.0	0.21	0.03
Interorbital constriction	62	5.04	4.8–5.9	0.12	0.01
Upper tooththrow C-M <sup>3</sup>	62	8.61	8.1–9.0	0.20	0.03
Lower tooththrow C-M <sub>3</sub>	62	9.02	8.4–9.5	0.21	0.03
Mandible length	54	16.63	16.0–17.3	0.32	0.04

Table 4. Body and Cranial measurements of *Myotis blythi omari*

	S. ASIA (Harrison & Lewis, 1961)			Transcaspiian region (Ognev, 1962).		
	N	Mean	Range	N	Mean	Range
Total length	8	133.94	126.0–139.0	—	—	—
Body length	—	—	—	4	67.30	61.0–72.0
Tail length	8	62.31	58.5–65.0	4	56.77	55.0–60.2
Hind foot	9	13.81	10.8–16.0	4	11.52	11.2–12.1
Ear length	9	25.06	22.0–28.0	4	23.97	22.9–25.2
Tragus length	—	—	—	4	11.95	10.1–15.0
Forearm length	8	60.09	57.3–62.0	4	58.80	57.2–60.5
Greatest length of skull	6	22.57	22.2–22.9	3	22.33	22.0–23.0
Condylbasal length	9	21.00	20.6–21.4	3	21.20	21.0–21.6
Zygomatic breadth	9	14.09	13.6–14.6	3	14.23	14.0–14.7
Breadth of braincase	9	9.61	9.3–9.9	—	—	—
Interorbital constriction	7	4.96	4.8–9.3	3	5.47	5.2–5.7
Upper tooththrow C-M <sup>3</sup>	9	8.90	8.4–9.3	3	9.30	9.0–9.7
Lower tooththrow C-M <sub>3</sub>	9	9.72	9.3–10.0	—	—	—
Mandible length	9	17.00	16.2–17.7	—	—	—

### Discussion

The greatest length of the skull of the female specimens from Crete average and range  $\bar{x} = 21.81$  mm, 21.2-22.4,  $n = 18$ ; that is statistically significant different ( $p < 0.01$ ) from that of the female specimens from Peloponnesus ( $\bar{x} = 20.98$  mm, 20.0-21.9 mm,  $n = 61$ ). The differences between the above two Greek populations, in the measurements of condylobasal length, zygomatic width, breadth of braincase, interorbital constriction, upper toothrow ( $CM^3$ ) and lower toothrow ( $CM_3$ ) are at the same level of significance ( $p < 0.01$ ). Therefore the specimens from Crete are distinguishable from the specimens of Peloponnesus on the basis of differences in Greatest length of skull, Condylobasal length, Zygomatic breadth, Breadth of braincase, Interorbital constriction, Upper toothrow and lower toothrow. On the other hand, there are not significant divergences between the measurements of the specimens from Crete and those given by Harrison and Lewis (1961) and Ognev (1962) for *Myotis blythi omari* (see table 4). Therefore is obvious the assignment of the population from the island of Crete of the genus *Myotis* to *Myotis blythi omari*.

**Remarks:** The results of the analysis presented above indicate that the individuals from Crete are clearly separable from those from Peloponnesus studied and confirm that *Myotis blythi omari* occurs on the islands of East Mediterranean area. Therefore the until now known extension of geographical distribution, is from Transcaspien region through west Asia to the Mediterranean islands until Malta and to the North Africa.

### Summary

A collection of *Myotis blythi omari* individuals was made in the cave „micro labyrinthaki“ on the island of Crete.

The specimens were studied and the results were compared with those taken from individuals of *Myotis oxygnathus* from Peloponnesus and those of *Myotis blythi omari* from Asia (Harrison and Lewis, 1961) and (Ognev, 1962). Data of body and cranial measurements are also given.

The conclusion of the present study is the confirmation of the distribution of *Myotis blythi omari* in Crete.

### Zusammenfassung

In der Berghöhle „Micro labyrinthaki“ auf Kreta wurde die Fledermausart *Myotis blythi omari* gesammelt.

Das Material wird mit *Myotis oxygnathus* vom Peloponnes und *Myotis blythi omari* aus Asien (Harrison und Lewis 1961, Ognev 1962) verglichen; Körper- und Schädelmaße werden mitgeteilt.

Die vorliegende Aufsammlung belegt die Verbreitung von *M. blythi omari* auf Kreta und ermöglichte erste Angaben zur Morphologie dieser Population.

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